

Battling Invasive Species In Manchester: Overview

- Manchester Urban Ponds Restoration Program
- Vegetation Inventories & Mapping
- Project Prioritization
- Outreach & Education
- Case Studies



What Is The Manchester Urban Ponds Restoration Program?

Part of the **Supplemental Environmental Projects Plan (SEPP)** which is an agreement between the city of Manchester, NH Department of Environmental Services, and the US Environmental Protection Agency to correct the sewer/stormwater overflow problem.

7 ponds in Manchester are being **evaluated and monitored** for restoration potential.



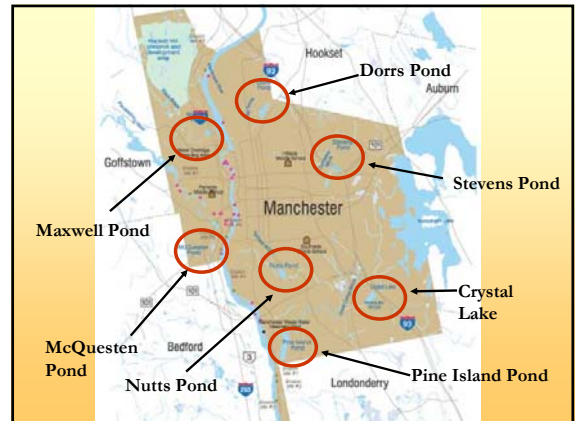
What Are The Goals Of The Program?

Goal: Return the ponds to their **historical uses**:



Objectives:

1. Promote **public awareness**, education, and stewardship.
2. Reduce pollutant load/nutrient inputs to **improve water quality**.
3. Maintain or enhance **biological diversity**.
4. Provide better **recreational uses** at the ponds.



Summer 2001: Shoreline & In-Lake Veg Surveys

What Vegetative Communities Are Present?



Are There Any Invasive Species?

Exotic Species Identification & Mapping

- Identified Terrestrial & Aquatic Invasives
- Created Map of Each Pond Documenting Extent of Invasive Species
- Established Photo Locations



Invasive Plant Species: Terrestrial

Japanese Knotweed



Autumn Olive

European Buckthorn



Invasive Plant Species: Aquatic

Brazilian clodea



Common Reed
(*Phragmites*)

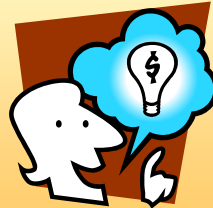


Purple Loosestrife

Purple Loosestrife – An Ambitious Invader!



Project Prioritization: Feasibility



- “Low-Hanging Fruit”
- Community Involvement/Participation
- Project “Piggyback”
- Financial & Time Constraints

Outreach & Education Endeavors



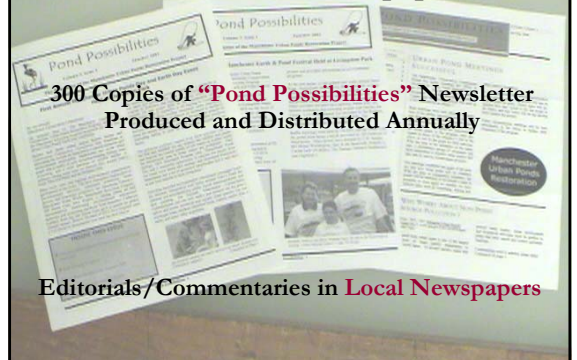
Boat Ramp Signs



Fact-Sheets for Kiosks



Newsletters & Newspapers



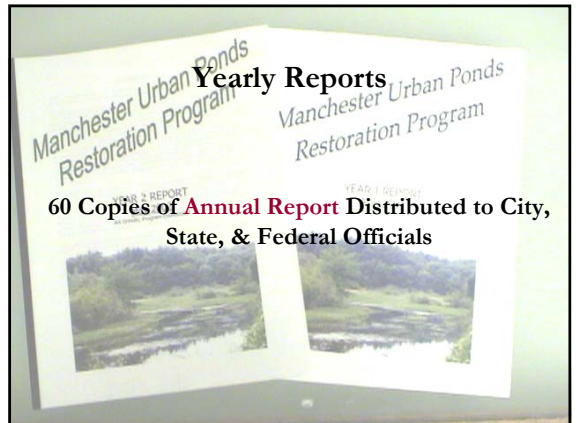
Web Site!

www.ci.manchester.nh.us/UrbanPonds

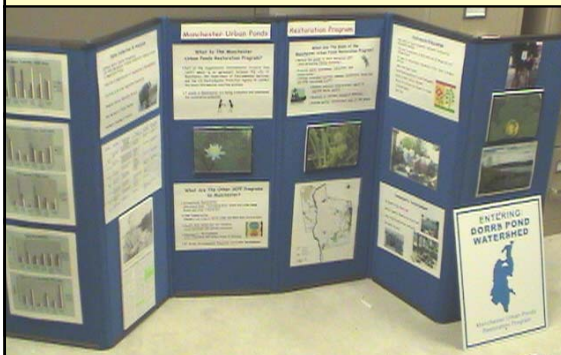


Yearly Reports

60 Copies of **Annual Report** Distributed to City, State, & Federal Officials



Traveling Display



Classroom Presentations & Field Events for 8th Grade and College Classes

"Meet Your Pond" Events
for Adults & Families



Case Studies



Case Study 1: Nutts Pond

Location: S. Willow Street

Issue: Brazilian Waterweed/Elodea (*Egeria densa*)

Status: Current Project



Nutts Pond: A Successful Eradication?

- **Summer 2000:** Dumped Fish Tank Found on Shoreline
- **Summer 2001:** Brazilian Elodea Identified & Mapped
- **Summer 2002:** Boat Ramp Sign Installation & Kiosk Info
- **Summer 2002:** Some Growth Over-wintered
- **Summer 2003:** Herbicide Application & Benthic Barriers

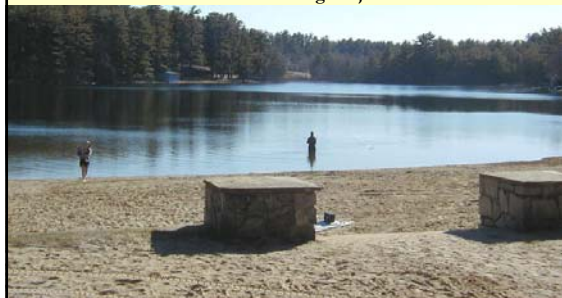


Case Study 2: Crystal Lake

Location: Bodwell Road

Issue: Common Reed (*Phragmites australis*)

Status: On-Going Project



Crystal Lake: “Low-Hanging Fruit”

- ~ 10 Years Ago: Common Reed Established
- ~ 5 Years Ago: CLPA Initiates Herbicide Application
- Parking Lot Drainage Causes Deposition of Sand Lense Suitable for Common Reed Proliferation
- Spring 2003: Fact-Sheets on Common Reed & Glyphosate Sent to Abutters
- Spring 2004: Plans for Parking Lot Drainage Improvements (May Amend WB Permit to Include Dredging)
- Summer 2004: UPRP Revisit Herbicide Application, Removal of Biomass & Possible Dredging



Case Study 3: Stevens Pond

Location: Underneath I93

Issue: Common Reed (*Phragmites australis*)

Status: Future Project



Stevens Pond: “Invasives Gone Wild”

- **I93 Runoff** Includes Salt
- Highest Sodium Chloride Concentrations
- Common Reed Establishes 5-10ppt (brackish)
- In Some Cases Common Reed Can Live In Up To 50ppt (saltwater)
- UPRP Working with City EPD & DOT To Establish **Plan To Improve/Contain/Filter Highway Runoff**
- Summer 2004: May Work With Americorps/City Year or Eagle Scouts to Rear & Disperse **Purple Loosestrife Beetles**



Case Study 4: Maxwell Pond

Location: Front Street/Route 3A

Issue: Climbing Bittersweet (*Celastrus orbiculata*)

Status: On-Going & Future Project



Maxwell Pond: “Project Piggy Back”

- **2001-2002:** Black Brook Corridor Restoration Project Interest
- **2003/2004:** Potential Maxwell Pond Dam Removal
- Potential Spread of Invasives If Dam Is Removed
- Have Held Site-Walk With NEWFS, Dept Ag, & MCC.
- Parks & Recreation Interested In Park Improvements
- Summer 2004: Potential Restoration Opportunity On Park-Side With Partnerships & Funding



Tools For Success: “Take-Home Messages”

- How Can You Fix It When You Don't Know What to Fix?
- **Inventory, Identify, Prioritize!**
- **Project Partnership Is Essential!**
- **Learn From Others!**
- **Expand Outreach/Education Endeavors!**
- **Seek Creative Funding Options!**
- **Publicize Projects & Successes With Measurable Results!**



Thank You!

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Manchester Conservation Commission

Urban Ponds Restoration Program

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